

AMERICAN MEN OF SCIENCE

A BIOGRAPHICAL DIRECTORY

EDITED BY

J. McKEEN CATTELL

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AT HARVARD

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PREFACE

THIS biographical directory of American Men of Science was begun as a manuscript reference list for the Carnegie Institution of Washington, which made an appropriation of \$1,000 toward the clerical and office expenses. It is hoped that the publication will be a contribution to the organization of science in America. There is here given for the first time a fairly complete survey of the scientific activity of a country at a given period. As a reference book for the field it covers, it may be even more useful in academic circles than *Minerva* or *Who's Who in America*. But the chief service it should render is to make men of science acquainted with one another and with one another's work. There scarcely exists among scientific men the recognition of common interest and the spirit of cooperation which would help to give science the place it should have in the community. It is fully as important for the nation as for men of science that scientific work should be adequately recognized and supported. We are consequently in the fortunate position of knowing that whatever we do to promote our own interests is at the same time a service to the community and to the world.

There are included in the directory the records of more than four thousand men of science, and it is believed that the entries are tolerably complete for those in North America who have carried on research work in the natural and exact sciences. Some are admitted who are supposed to have advanced science by teaching, by administrative work, or by the preparation of text-books and compilations. There are also some whose work has been chiefly in engineering, medicine or other applied sciences, and a few whose work is in education, economics or other subjects not commonly included under the exact and natural sciences. But the book does not profess to cover these fields. The names are included because they are supposed to represent work that has contributed to the advancement of pure science—the term being used in the narrower sense—or because they are found in the membership lists of certain national societies. All the members of the following societies who filled in the blank sent them are included: The National Academy of Sciences, fellows of the American Association for the Advancement of Science, the American Society of Naturalists, the Association of American Anatomists, the Association of American Geographers, the Association of American Physicians, the American Association of Pathologists and Bacteriologists, the Astronomical and Astrophysical Society of America, the Botanical Society of America, the Geological Society of America, the American Mathematical Society, fellows of the American Ornithologists' Union, the American Philosophical Association, the American Physical Society, the American Physiological Society, the American Psychological Association, the American Society of Bacteriologists, the Society for the Promotion of Agricultural Science, the Society for Experimental Biology and Medicine, the Society of Horticultural Science, the Society for Plant Morphology and Physiology, and the American Society of Zoologists.

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While these societies do not coincide exactly in scope with this work or have uniform standards of admission, it seemed unwise to attempt to discriminate among the members. If a few are admitted owing to their membership in societies who would not have been admitted on such opinion of the value of their work as the editor might be able to secure, no great harm is done. These societies must be regarded as the basis for the organization of science in this country, and their membership may properly be included in a work that is intended to promote this organization. In addition to these societies the membership of medical, engineering and other societies was reviewed, the catalogues of institutions of learning were consulted, other reference books (especially *Who's Who in America*) were used, the contributions to scientific journals were analyzed, requests for names omitted were printed in *Science*, in *The Popular Science Monthly* and in *The Nation*, and much assistance was received from individuals.

The blanks were sent in all to about ten thousand who might have contributed to the advancement of science, and from the replies the names included have been selected. As many as four requests were sent to those who it was believed should be included when they did not reply to previous applications. Proofs of all the biographies were submitted for correction — a second and a third copy having been sent when necessary — and revised proofs were sent after the corrections had been entered.

It was intended that each entry should contain information as follows :

- (1) The full name with title and mail address, the part of the name ordinarily omitted in correspondence being in parentheses.
- (2) The department of investigation given in italics.
- (3) The place and date of birth.
- (4) Education and degrees.
- (5) Positions with dates, the present position being given in italics.
 - a) Temporary and minor positions.
- (6) Honorary degrees and other scientific honors.
- (7) Membership in scientific and learned societies.
- (8) Chief subjects of research, those accomplished being separated by a dash from those in progress.

The abbreviations are intended to be self explanatory, not being carried far except in the case of the scientific societies. Here F.A.A. signifies fellow of the American Association for the Advancement of Science, and M.A.A., member of the association. 'American' is omitted in the case of the national societies. In citing institutions of learning the words 'college' and 'university' are omitted. Degrees are cited as A.B., A.M., etc., although the reverse order of the letters is used in Great Britain and sometimes here. When the same position has been occupied successively in different institutions, the name of the position is not repeated, and when different positions have been occupied successively in the same institution, the name of the institution is not repeated.

A star is prefixed to the subject of research in the case of about a thousand of the biographical notes. These are the thousand students of the natural and exact sciences in the United States whose work is supposed to be the most important. In each of the twelve principal sciences the names were arranged in the order of merit by ten leading students of the science. The average positions and the probable errors were then calculated, so that in each science the order of merit was determined together with its validity. The names were then combined in one list by interpolation, the numbers in each science being taken approximately proportional to the total number of workers in that science. The thousand

are distributed among the sciences as follows : Chemistry, 175 ; physics, 150 ; zoology, 150 ; botany, 100 ; geology, 100 ; mathematics, 80 ; pathology, 60 ; astronomy, 50 ; psychology, 50 ; physiology, 40 ; anatomy, 25 ; anthropology, 20. The star means that the subject of the biographical sketch is probably among the leading thousand students of science of the United States ; but its absence does not necessarily mean that the subject of the sketch does not belong in this group, as the name may not have been considered in making the arrangements.

My object in determining the thousand leading American men of science was to secure a group for scientific study. I have also selected for this purpose the thousand leading men in the history of the world arranged in the order of eminence, and I am selecting a thousand students of Columbia University. My original interest in this work of reference was to secure data for a statistical study of the conditions, performance, traits, etc., of a large group of men of science, and I had intended to include the results of this study in the book. It seems, however, unwise to postpone the publication of the biographical sketches until the scientific study has been completed.*

I am under unusual obligations to a large number of men of science for assistance in this work. I should be glad to give a list of about two hundred to whom I am particularly indebted, but perhaps some of them would prefer not to have their names mentioned. I have been assisted in the compilation by Mr. Wm. Harper Davis, then assistant in psychology at Columbia University and now assistant professor in Lehigh University, by Dr. H. D. Marsh, then scholar in psychology at Columbia University and now instructor in Ohio Wesleyan University, by Miss M. C. Ennis, and most of all by Dr. Vivian A. C. Henmon, now lecturer in psychology at Columbia University. So much completeness and accuracy as the work may have is largely due to them.

J. McKEEN CATTELL

COLUMBIA UNIVERSITY,
January, 1906

* Two papers on the subject have been printed—'Homo Scientificus Americanus : Address of the president of the American Society of Naturalists,' *Science*, N. S., 17 : 561-570, 1903, and 'Statistics of American Psychologists,' *Am. Jour. of Psychol.*, 14 : 310-328, 1903. A further series of articles, which is now nearly ready, will probably be printed in *Science*. Cf. in regard to the other groups 'A Statistical Study of Eminent Men,' *Pop. Sci. Mon.*, 53 : 359-378, 1903, and 'Physical and Mental Measurements of the Students of Columbia University,' *Psychol. Rev.*, : 618-648, 1896.

- scholar, Bryn Mawr, 95-96, fellow, 96-97; Room at Woods Hole, 96, 97; Mary E. Garrett European fellow, 98-99; Am. Woman's Table, Naples, 98; Ph.D., Bryn Mawr, 00; Am. Woman's Table, Naples, 01. Student asst. *biol.*, Bryn Mawr, 97-98; instr., *Woman's Col. of Baltimore*, 99-02, *assoc. prof.*, 02- Soc. Nat.; Soc. Zool. Regeneration of hydroids; embryology.—Life history of *Haematococcus*.
- Peet, Rev. Stephen D(enison)**, 438 57th St, Chicago, Ills. *Archeology, Ethnology*. Euclid, O, Dec. 2, 30. A.B., Beloit, 51; Andover Theol. Sem., 54. Pastor, Congregational church; ed., '*Am. Antiquarian and Oriental Journal*,' 79-Hon. Ph.D., Beloit, 97. Antiq. Soc; Oriental Soc; Soc. Bib. Archeol; N. Y. Numis. Soc; Anthropol. Inst. of Gt. Britain and Ireland; Victoria Inst. Comparative religions; aboriginal customs; prehistoric art and architecture.—Mythology in America; migration of Indian tribes; alphabets and codices.
- Pegram, Dr. Geo(rge) B(raxton)**, Columbia University, New York, N. Y. **Physics*. Trinity, N. C, Oct. 24, 76. A.B., Trinity (N. C.), 95; Columbia, 99-00, Ph.D., 03. Teacher, high schools, N. C., 95-99; asst. *physics*, Columbia, 00-02, tutor, 02-05, *instr.*, 05- Magnetic observer, U. S. Coast and Geod. Surv., 02-03. F.A.A.; Physical Soc. Radio-activity of thorium.—Secondary radio-activity in the electrolysis of thorium.
- Peirce, Prof. B(enjamin) O(sgood)**, Jefferson Physical Laboratory, Cambridge, Mass. **Mathematical physics*. Beverly, Mass, Feb. 11, 54. A.B., Harvard, 76; Ph.D., Leipzig, 79; Helmholtz's Lab, Berlin, 80. Instr. math, Boston Latin Sch., 80-81; *Harvard*, 81-84, asst. prof. math. and physics, 84-88, *Hollis prof. math. and nat. philos.*, 88- F.A.A.; Physical Soc; Math. Soc; Astron. and Astrophys. Soc; Am. Acad; Wash. Acad. Gas batteries; spectra of the haloid compounds of mercury; the propagation of heat in solid bodies; the thermal conductivities of rocks; the temperature variations of the thermal conductivities of marble and slate; plane doublets and quadruplets; generalized space differentiation; families of curves which are the lines of certain plane vectors either solenoidal or lamellar; classes of solenoidal and lamellar vectors symmetrical with respect to an axis; theorems concerning the steady flow of electricity through massive conductors; isothermal conics; the sensitiveness of the eye to slight differences in color; the properties of batteries formed of cells joined up in a multiple arc; the electrical resistances of various poor conductors; the perception of horizontal and vertical lines; etc.
- Peirce, C(harles) S.** 'Arisbe,' Milford, Pa. **Logic*. Cambridge, Mass, Sept. 10, 39. A.B., Harvard, 59, A.M., 62, B.S., 63. Asst., U. S. Coast and Geod. Surv., 73-93. Lecturer, Harvard, 64-65, 69-71; Hopkins, 80-82; Lowell Inst, 66, 95, 03. Delegate for U. S. Int. Gradmessung Conf, Stuttgart. Nat. Acad; Am. Acad. Logic, especially logic of relations, probabilities, theory of inductive and abductive validity; epistemology; metrology; history of science; multiple algebra; doctrine of multitudes; gravity; wave-lengths; phonetics of Elizabethan English; great men; ethics; phanerescopy; cosmology; experimental psychology; physical geometry.—Foundations of mathematics; classification of science; code of terminology; topical geometry.
- Peirce, Prof. G(eorge) J(ames)**, P. O. Box 65, Stanford University, Cal. *Plant physiology*. Manila, P. I., March 13, 68. B.S., Harvard, 90, Parker fellow, 92-94; Ph.D., Leipzig, 94. Asst. bot., Harvard and Radcliffe, 90-92; asst. prof., Indiana, 95-97; *Stanford*, 97-00, *assoc. prof. plant physiol.*, 00- F.A.A.; Soc. Plant Morph. and Physiol; Bot. Gesell. Physiology, especially of parasitic plants.—Various parasitic flowering plants.
- Peirce, Prof. J(ames) M(ills)**, 4 Kirkland Place, Cambridge, Mass. **Mathematics*. Cambridge, May 1, 34. A.B., Harvard, 53, A.M., 56. Tutor *math*, *Harvard*, 54-58, asst. prof., 61-69, *prof.*, 69- Math. Soc; Am. Acad. Quaternions; triangular and tetrahedral coordinates.
- Pell, Prof. Alex(ander)**, Vermilion, S. Dak. **Mathematics*. Moscow, Russia, Sept. 25, 57. Fellow, Ph.D., Hopkins, 97. *Prof. math*, *South Dakota*, 97- Math. Soc; Kasan (Russia) Math. Soc. Differential geometry.
- Pellew, Prof. Charles E(rnest)**, 10 W. 43d St, New York, N. Y. **Chemistry*. London, England, March 11, 63. E.M., Columbia, 84. Instr. and later demonstrator physics and chem, Col. Physicians and Surg, *Columbia*, 87-97, *adj. prof. chem*, 97- Chem. Soc; Soc. Chem. Indust; fel. N. Y. Acad; Chem. Verein.
- Pender, Dr. Harold**, Syracuse University, Syracuse, N. Y. *Physics*. Tarboro, N. C, Jan. 13, 79. A.B., Hopkins, 98, Ph.D., 01. Teacher, McDonough Sch., 01-02; *instr. physics*, *Syracuse*, 02- Physical Soc. Electrical convection.—Magnetic action of charged carbonic acid stream.
- Penfield, Prof. Samuel L(ewis)**, Sheffield Scientific School, New Haven, Conn. **Mineralogy*. Catskill, N. Y., Jan. 16, 56. Ph.B., Yale, 77; Strasburg, 81; Heidelberg, 84; A.M., Yale, 96. Asst. anal. chem, *Yale*, 78-79, instr. and asst. prof. *miner*, 80-93, *prof.*, 93- LL.D., Wisconsin, 04. Nat. Acad; F.A.A.; Geol. Soc; assoc. fel. Am. Acad; Gt. Britain Miner. Soc; London Geol. Soc; Göttingen Gesell; Stockholm Geol. Soc; Christiania Sci. Soc. Mineral chemistry and crystallography.
- Penhallow, Prof. D(avid) P(earce)**, McGill University, Montreal, Can. *Botany*. Kittery Point, Me, May 25, 54. B.S., Mass. State, 73; Boston, 88; B.S., M.S., McGill, 96, Sc.D., 04. Prof. bot. and chem, Imperial Col. Agr, Japan, 76-80; botanist, Houghton Farm Exp. Sta., 82-83; *prof. bot*, *McGill*, 83- Acting pres, Imperial Col. Agr, Japan, 79-80; ed., 'Can. Rec. Science,' 88-90, 04-; assoc. ed., 'Am. Nat-